

Lack of Sleep Could be Trouble for CTE Students



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By Gary Scarpello

CAREER AND TECHNICAL EDUCATION (CTE) STUDENTS MORE SO THAN NON-CTE STUDENTS find themselves in school environments using equipment and tools that could cause injury if mishandled. It is imperative that these students be wide awake and alert when operating these tools. But many adolescents are not getting the sleep they need to be refreshed and alert. Researchers have found that adolescents and even those in their early 20s need nine to 10 hours of sleep a night to feel refreshed. The National Sleep Foundation (NSF) found that 75 percent of teenagers were not getting the recommended 9 to 10 hours of sleep on school nights and high school seniors averaged only 6.9 hours of sleep. In the Liberty Mutual/SADD (Students Against Destructive Decisions)

study, teens had an average of 7.2 hours of sleep on school nights; between 15 percent and 30 percent of all children may have a sleep disturbance during childhood; and as much as 33 to 75 percent of all adolescents have sleep problems.

Sleep restores brain functions that affect metabolism, alertness, memory and regulates hormones. Not getting enough sleep can lead to impaired hand-eye coordination, reaction time, vision, awareness of surroundings, judgment, impulse control, and can cause brief mental lapses called micro-sleeps, which impede concentration and retention. This condition is particularly dangerous for CTE students who use tools and equipment.

Other effects of sleep deprivation include tardiness, falling asleep in class, lethargy, moodiness, irritability, anxiety,

aches, depression, anger, hyperactivity, behavioral problems, increased suicidal ideation and attempts, and drug and alcohol abuse. Harvard University found that sleep deprivation has been linked to decreased immunity functions, which may increase susceptibility to illness. A report from the Archives of Disease in Childhood from the United Kingdom, found that lack of sleep could affect a person's metabolic balance, which may increase the chances of obesity, diabetes and cardiovascular disease.

Academic problems are also associated with sleep deprivation. Tired students have a hard time paying attention. If they do manage to pay attention in class, they may forget what they learned because memory is partially formed during sleep. Researchers Mary A. Carskadon and A.R. Wolfson studied 3,120 Rhode Island children. They found that students who were struggling or failing in school got less sleep than those who were earning As and Bs. Carskadon also found that the more irregular the bedtime hour, the lower the student's grades. A 2001 study found that college students who slept more than nine hours a night had higher grade-point averages than those sleeping less than six hours (3.2 GPA vs. 2.7). Sleep deprivation also makes it difficult for students to start and stick with tasks that involve long-term or abstract goals.

Why the Sleep Deprivation?

One reason is biological. When a child enters puberty, the body goes through changes that make it harder to go to sleep early and wake up early. When growth hormones kick in during adolescence, a young person's circadian rhythm changes. According to Kyla Wahlstrom, associate

director at the University of Minnesota's Center for Applied Research and Educational Improvement, children between the ages of 13 and 19 secrete the sleep hormone melatonin between the hours of 11:00 p.m. and 8:00 a.m. As the child ages, melatonin is secreted later and later in the evening. The center notes that it is unnatural to expect teenagers to be alert at 7:30 a.m. Another factor in teenagers staying up late is that the rate at which sleepiness builds up during the day decreases during adolescence.

The other major reason teenagers are sleep deprived is lifestyle. Teenagers today are overextended. They are involved in too many activities that extend late into the evening and then they are required by schools to be up early in the morning to be in class as early as 7:00 a.m. For example, teenagers who work more than 20 hours a week after school have more symptoms of daytime sleepiness than those who don't work. Another contributing factor in teens not getting enough sleep involves parents. Only one in 20 high school students have parents who set a bedtime for their children, according to a 2005 study¹. Most teenagers watch TV, use their cell phone, text message, use their computer, or do homework in their bedroom right up to the time they crash. This is not the ideal way to have a restful sleep. Those students with a set time to go to sleep tend to be better rested and do better in school.

Action Plans: What Students Can Do

Sleep experts note that bedtime etiquette is important to ensure quality sleep. Among the recommendations:

1. Don't consume caffeine hours before bedtime.
2. Have quiet time before bedtime. Read a book, listen to quiet soothing music, or meditate.
3. Remove the TV, cell phone, computer and video games from the bedroom.
4. Improve time management skills so student is not doing last minute school-

work late at night.

5. Don't stay up later on weekends and try to use binge sleeping to catch up.

What Parents can do

1. Set the child's bedtime so that he or she gets at least 8.5 hours of sleep.
2. Try to limit late night hours.

What Some Schools are Doing

Some schools have started later to allow teens to get more sleep. These schools are starting after 8:00 a.m., although the NSF recommends 9:00 a.m. as the ideal start time. In 1996, the school district in Edina, Minnesota, changed its high school start time to 8:30 a.m. The district noticed that students are more engaged and alert in their first-period classes as a result of the change. The district saw grades go up as a result of a later start time. The Minneapolis school district followed suit in 1997. Teachers report students are less likely to fall asleep in morning classes, with some students reporting they get more sleep and are more likely to eat breakfast. Attendance and graduation rates in schools have gone up while tardiness has gone down.

CTE students who work with dangerous equipment should be well rested. They should also be made aware of the effects of sleep deprivation and how it can impact their class/lab activities. Schools, parents and students will need to work together to ensure students are well rested and alert. **1**

Endnotes

- 1 Sanghavi, D. (2005). Teens Need Help to Form Better Sleep Habits., *Boston Globe*, Boston MA.: Jun 21, 2005. C 1.

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